

Claims:

What is claimed is:

1. An apparatus for configuring data cells received in a telecommunications process in a continuous stream of data cells of fixed length and each comprising a header and a user data part, the apparatus comprising a processing unit adapted and configured so that it is able to check data cells for the presence of empty cells, discard the data cells consisting of empty cells, then check the user data parts of the data cells less the empty cells without buffering to determine whether they belong together, and then to assemble the user data parts of the data cells belonging together into a frame.
2. The apparatus as in claim 1 wherein said processing unit comprises one or more processors.
3. The apparatus as in claim 2 further comprising a program storage unit connected to said one or more processors and containing a program to be executed by said processors.
4. The apparatus as in claim 3 further comprising a frame memory connected to said processing unit and in which said processing unit is further adapted and configured to save frames in said frame memory.
5. The apparatus as in claim 1 wherein said data cell header provides information as to whether said data cell is an empty cell, and said processing unit is additionally adapted and configured to check said data cells for empty cells by way of this information.
6. The apparatus as in claim 5 wherein said data cell header comprises information as to whether said user data part of said data cell is the last element

of a frame of user data parts belonging together, and said processing unit is additionally adapted and configured to check which user data parts of said data cells in sequence belong together by way of this information.

7. The apparatus as in claim 6 wherein said data cell header comprises information as to the destination address of said data cell and said processing unit is additionally adapted and configured to check, prior to assembly of said data cells, whether said destination address is correct and discard data cells whose destination addresses are incorrect.

8. The apparatus as in claim 1 wherein said data cells are ATM cells.

9. The apparatus as in claim 8 wherein said frames are AAL5 SDUs in an ATM system.

10. The apparatus as in claim 8 wherein said processing unit is adapted and configured so that in checking for and discarding empty cells it additionally implements the functions of the TC protocol layer of an ATM system.

11. The apparatus as in claim 10 wherein the functions of said TC protocol layer also include synchronizing said ATM cells.

12. The apparatus as in claim 10 wherein said processing unit is adapted and configured so that in assembling user data parts of data cells into frames it additionally implements the functions of the SAR protocol layer of an ATM system.

13. The apparatus as in claim 1 wherein said processing unit is adapted and configured to receive and split frames so that their user data can be distributed to data cells and transmit a continuous stream of data, it then being able to insert empty cells into said data stream when no user data is present.

14. The apparatus as in claim 1 wherein said data cells belonging to a frame are received in sequence.
15. The apparatus as in claim 1 wherein said data cells belonging to a frame are received interleaved and said processing unit is additionally adapted and configured to assign said data cells to said individual frames on the basis of the destination address of said data cells.
16. A modem including an apparatus as set forth in claim 1.
17. The modem as in claim 16 wherein the modem is adapted and configured as an ADSL modem.
18. A method for configuring data cells received in a telecommunications process in a continuous stream of data cells of fixed length, each comprising a header and a user data part, the method comprising the steps of:
 - checking said data cells for empty cells,
 - discarding data cells consisting of empty cells,
 - checking said user data parts of said data cells less said empty cells, without buffering same, to identify which cells belong together, and
 - assembling said user data parts of said data cells that belong together into a frame.
19. The method as in claim 18 further comprising storing said frames.

20. The method as in claim 18 wherein said data cell header includes information as to whether said data cell is an empty cell, and wherein checking said data cells for empty cells is done by way of this information.
21. The method as in claim 20 wherein said data cell header comprises information as to whether said user data part of said data cell is the last element of a frame of user data parts belonging together, and wherein checking which user data parts of said data cells in sequence belong together is done by way of this information.
22. The method as in claim 21 wherein said data cell header includes information as to the destination address of said data cell, and further comprises checking prior to the step of assembling said data cells to determine whether said destination address is correct, and discarding data cells whose destination address is incorrect.
23. A computer-readable medium on which instructions are stored enabling one or more processors to implement a method as set forth in claim 22.
24. A method as in claims 22 in which said frames comprise a predefined format and more particularly comprise a predefined length.